

NESTEROVA, Ye. A.

"Estimation of Vitamin D in Milk Fat by Paper Chromatography"

Report to be presented at Medical Society of J. E. PURKYNE, Czech,
Vitaminological Cong., Prague Czech., 3-6 Jun 63

NESTEROVA, YE.A., (USSR)

"Certain Features of Nitrogen Metabolism in Vitamin D
Deficiency in Farm Animals."

Report presented at the 5th Int'l. Biochemistry Congress,
Moscow, 10-16 Aug 1961.

NESTEROVA, Ye.A.

[Organization of quality control of feeding stuffs on collective and state farms] Organizatsiia proizvodstvennogo kontrolya za kachestvom kormov v kolkhovakh i sovkhozakh; metodicheskie ukazaniia. Moskva, Vsesoiuznyy nauchno-issledovatel'skii institut zhivotnovodstva, 1956. 16 p. (MLRA 10:9)
(Feeding and feeding stuffs--Production control)

NESTEROVA YE. A., BODROV, V. I.,

Hay

Preparing hay rich in vitamins on the Tel'man Collective Farm. Sots. zhiv. 14
N. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, August 195², Uncl.

1. NESTEROVA, Ye, A.
2. USSR 600
4. Feeding and Feeding Stuffs- Analysis
7. Chemical analysis in evaluating nutrition of rations and feeds, Sov. zootekh, 7 No. 5, 1952 Kandidat Sel'skokhozyaystvennykh Nauk Vsesoyuznyy Nauchno-Issledovatel'skiy Institut Zhivotnovodstva
9. Monthly List of Russian Accessions. Library of Congress, July 1952.
Unclassified

26283

S/078/61/006/009/002/010

B107/B101

Determination of the saturated...

There are 1 figure, 3 tables, and 29 references: 15 Soviet and 14 non-Soviet. The four most important references to English-language publications read as follows: Ref. 8: K. Hashimoto, K. Hirakawa. J. Phys. Soc. Japan, 11, 716 (1956); Ref. 12: A. Okuzaki, I. Ueda. J. Phys. Soc. Japan, 11, 470 (1956); Ref. 23: W. H. Zachariasen. Phys. Rev., 40, 925 (1932); Ref. 24: D. R. Stull, G. C. Sinke, Thermodynamic Properties of the Elements. Amer. Chem. Soc., Washington, 1956, pp 180, 201, 209.

SUBMITTED: July 27, 1960

X

Card 3/5

Determination of the saturated ...

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S/078/61/006/009/002/010
B'07/B'01

this value agrees well with publication data (Ref. 8, see below). The lattice constants of the rhombical SnSe cell are : $a = 4.46 \pm 0.01$; $b = 4.17 \pm 0.01$; $c = 11.46 \pm 0.01$ kX (Table 2). The values about agree with previous data (Ref. 12, see below); as shown by the intensity of the lines, the compound has the same structure as GeS (Ref. 23, see below). After distillation in vacuum (10^{-4} mm Hg, SnSe at 650-700°C and SnTe at 640-680°C), chemical composition and lattice constants are unchanged. The pressure of the saturated vapor was determined according to Knudsen's method. Two quartz-effusion chambers with openings of different sizes were used. Calibration measurements were conducted with KCl. Measurement results are listed in Table 3. The maximum error amounts to 20%. The following dependence was obtained for SnSe in the range of from 569 to 647°C: $\log p = -9186.6/T + 8.696$; (p in mm Hg); $\Delta H_{891}^{\circ} = 42.0 \pm 1$ kcal per mole. The following equation was obtained for SnTe in the range of from 575 to 731°C: $\log p = -9817.3/T + 9.009$. (p in mm Hg); $\Delta H_{926}^{\circ} = 44.9 \pm 4.3$ kcal/mole. The authors thank Yu.P. Simanov and L.M. Kovba for help with the X-ray investigation.

Card 2/5

5 4800 1273 1228 1297

26283
S/078/61/006/009/002/010
B107/B:01

AUTHORS: Nesterova, Ya.M., Pashinkin, A.S., Novoselova, A.V.

TITLE: Determination of the saturated-vapor pressure of solid tin selenide and tin telluride.

PERIODICAL: Zhurnal neorganicheskoy khimii, v. 6, no. 9, 1961, 2014-2018

TEXT: The lattice constants and saturated-vapor pressure of SnSe and SnTe were determined. This is of interest for finding out whether it is possible, by distillation, to remove the tin impurity from selenium and tellurium, which serve for rectifiers or alloys for thermoelectric cooling. The present study is a continuation of publications on the saturated-vapor pressures of selenides and tellurides of the second- and fourth group elements. (Last publication: I.V. Korneyeva, V.V. Sokolov, A.V. Novoselova, Zh. neorg. khimii, 5, 241 (1960)). The compounds were prepared from the elements; the composition was checked analytically. Radiographs were made by the PKA-57 (RKD-57) camera and nickel radiation. SnTe crystallizes cubically in accordance with the NaCl type, with $a = 6.310 \pm 0.005$ kX;

Card 1/5

KARAGEZYAN, M.A., kand. med. nauk; NESTEROVA, V.P.; VATUL'YAN, K.A.

Prevention of occupational dermatoses in workers of the
Krasnodar Plant of Measuring Instruments. Nauch. trudy Kub.
gos. med. inst. 19:40-47 '62. (MIRA 17:8)

1. Iz kafedry kozhnykh i venericheskikh bolezney (zaveduyushchiy -
prof. L.A. Neradov) Kubanskogo gosudarstvennogo meditsinskogo
instituta.

USSR / Pharmacology. Toxicology. Chemiotherapeutic Preparations. Anti-Biotics. V

Abs Jour : Ref. Zhur -- Biologiya, No. 5, 1959, 14018

Author : Potoskiy, I.I.; Nesterova, V. P.

Inst : -

Title : Long-Term Results of Treatment of Syphilis With Penicillin in Combination With Fever.

Orig Pub : Nauchn. zap. po dermatol. i venerol. vrachey Kubani, 1958, vyp. 2, 204-209

Abstract : Control observations, over a course of 4-8 years, of patients with primary and secondary fresh syphilis demonstrated the effectiveness of pyro-penicillin therapy (P). In this group of patients, in no case was either clinical or serologic recurrence established. Early untreated secondary recurring syphilis may be successfully

Card 2/2

NESTEROVA, V.N.. nauchnyy sotrudnik.

Fluorescent cytological study of vaginal mucosa during the menstrual cycle of healthy women. Akush. i gin. 34 no.6:61-64 N-D '58.

(MIRA 12:1)

1. Iz Rostovskogo nauchno-issledovatel'skogo instituta akusherstva i pediatrii (dir. - kandidat meditsinskikh nauk F.S. Baranovskaya, nauchnyy rukovoditel' - prof. P.Ya. Lel'chuk) Ministerstva zdavookhraneniya RSFSR.

(MENSTRUATION

cyclic changes of vaginal mucosa, luminescent microscopy

(VAGINA, physiol.

(Rus))

mucosal changes during menstrual cycle, luminescent microscopy (Rus))

NESTEROVA, V.N.

Vitamin B₁ content of maternal blood, of the placenta and of the umbilical blood in spontaneous abortion at various stages of pregnancy. Akush. i gin. 33 no.1:53-55 Ja-F '57
(MLRA 10:4)

1. Iz Rostovskogo oblastnogo nauchno-issledovatel'skogo instituta akusherstva i ginekologii (dir.-kandidat meditsinskih nauk F.S. Baranovskaya, nauchnyy rukovoditel'-prof. P. Ya. Lel'chuk)
(ABORTION,

vitamin B₁ in maternal blood, in placenta, & in umbilical blood in spontaneous abortion in various stage of pregn.)
(VITAMIN B₁ in blood,
in maternal blood, placenta, & umbilicus in spontaneous abortion in various stage of pregn.)

NESTEROVA, V.I.

SECRET

27 1220

39459

S/241/62/007/001/001/006
1015/1215

AUTHOR: Domshlak, M. P., Grigor'yev, Yu. G., Darenkaya, N. G., Koznova, L. B., Nevskaya, G. E.
Nesterova, V. I. and Tereshchenko, N. Ya.

TITLE: Remote observations on persons subjected to radiotherapy

PERIODICAL: Meditsinskaya radiologiya, v. 7, no. 1, 1962, 10-16

TEXT: A previous report (Domshlak et al., 1957) dealt with observations on 160 persons who had been subjected to X-ray and gamma-ray therapy 2 to 7 years prior to the study period. The present article is based on observations on 218 persons, aged thirty to sixty, at various intervals (up to 10 years) after having been subjected to radiation. In 41.9% of the cases, the general condition of persons irradiated in the past became worse. On the other hand, no abnormal pressure was noticed, despite the fact that hypertension was a common finding during the irradiation period. Ophthalmological examination did not reveal any changes except those due to aging. Various functional disorders were noticed in the nervous system, including both cortical and sub-cortical disturbances. In some cases, microsymptoms of organic damage of the CNS were present. There is 1 table.

SUBMITTED: July 3, 1961

Card 1/1

1. NESTEROVA, V. I. FRUMKIN, A. N.

2. USSR (600)

4. Oxidation

7. Platinum electrode. Part 9. Adsorption of oxygen on platinized platinum on contact with molecular oxygen and on anodic polarization. Zhur. fiz. khim. 26 no 3, 1952

9. Monthly List of Russian Accessions, Library of Congress, January 1953, Unclassified.

NESTEROVA, V.B.

Methodology of the epidemiological analysis of aqueous
outbreaks of dysentery. Trudy TSIU 80:13-16 '65.
(MIRA 18:11)

NESTEROVA, V.B.

Characteristics of water-borne dysentery outbreaks, Trudy "GIU"
68:40-42 '64. (MIRA 18:5)

MASSOVA, B., kontroler; NESTEROVA, V.; DOBRZHINSKIY, A.

Workingwomen need comfortable work clothes. Rabotnitsa 36
no.10:22-23 0 '58. (MIRA 12:1)

1. Kuznechnyy tsekh Saratovskogo podshipnikovogo zavoda (for
Massova). 2. Nachal'nik proizvodstva termicheskogo tsekha
Saratovskogo podshipnikovogo zavoda (for Nesterova). 3. Starshiy
tekhnicheskiy inspektor Saratovskogo oblssovprofa (for Dobrzhinskiy).
(Work clothes)

NESTEROVA, V.; RUSAKOVSKIY, M.

With one's own hands. Prof.-tekhn. obr. 12 no. 6:30 Ja '55.
(MLRA 8:9)

1. Inzhener-inspektor Latviyskogo respublikanskogo upravle-
niya trudovykh rezervov (for Nesterova)
(Schools--Furniture, equipment, etc.)

IGNATIYEVA, G.V.; SARAYEVA, N.I.; KHROMETSKAYA, T.M.; LID NEVA, A.G.;
MASTYUKOVA, I.N.; NESTEROVA, T.P.; ALAFUZOVA, E.P.; YEREMOVA, A.B.;
BARANOVA, T.V.; BEKLEMESHEVA, Ye.D., SHIPOVA, Z.P.; GLEBOVA, N.V.;
KHIYABICH, G.N.; KHANTSIS, S.S.

Clinical and epidemiological effectiveness of a reduced dose of
 γ -globulin (1.5 ml) in seroprophylaxis of measles. Zhur.mikrobiol.,
epid. i immun. 42 no.12:57-61 D '65. (MIRA 19:1)

1. Moskovskiy institut epidemiologii i mikrobiologii; Institut virus-
sologii imeni Ivanovskogo AMN SSSR; Moskovskaya sanitarno-epidemiolo-
gicheskaya stantsiya; Rybinskaya sanitarno-epidemiologicheskaya
stantsiya; Vladimirskaia sanitarno-epidemiologicheskaya stantsiya i
Ob"yedinennaya detskaya poliklinika, Makhachkala.

ABOLMASOV, Anatoliy Petrovich; NEMZER, Lev Anatol'yevich; KONSTANTINOVA,
Ye.A., red.; NESTEROVA, T.M.; SOBOLEVSKAYA, Z.S., tekhn.red.

[Dictionary of Japanese geographical names; 60,000 words]
Slovar' iaponskikh geograficheskikh nazvaniy. 60000 slov.
Moskva, Gos.izd-vo inostr.i natsional'nykh slovaroi, 1959.
577 p. (MIRA 12:11)

(Japan--Names, Geographical--Dictionaries)
(Japanese language--Transliteration)

NESTEROVA, S. V.

5(2), 3(4)
 AUTHOR: Sokolova, O. I.
 TITLE: Results of the Competition for the Best Improving
 Suggestion (Izgot kontursa na luchshaye razionalizatorskiye
 predlozheniya)

907/5-52-7-4/25

PERIODICAL: Geodesiya i kartografiya, 1959, Nr 7, pp 17-21 (USSR)

ABSTRACT: In May 1959, the ordinary competition for the best improv-
 ing suggestion in the field of topographic-geodetic and
 cartographic production was concluded at the Glavnoye uprav-
 leniye geodesii i kartografi MVD SSSR (Main Administration
 of Geodesy and Cartography of the Ministry of Internal Affairs
 of the USSR). 7 aerogeodetic services, 5 cartographic institutes
 and 18 KHCN took part in the competition. 50 suggestions
 and 1,000 rubles were awarded to V. A. Morozov and V. V. Urusov
 (Minskaya kartograficheskaya fabrika (Minsk Cartographic
 Plant) for the "Seamless Fastening of Atlas Sheets".
 The 2nd prizes of 750 rubles were awarded to: 1) O. A. Shcheglov
 and V. I. Kuznetsov (Vostochnyye kartograficheskiye zavody
 (Vostochnyye Otkryvay)) 2) I. V. Gurevich, Y. M. Voznukhin,
 S. O. Radovitskiy, O. D. Zhukov, I. I. Lazukova for
 "Technology of the Manufacture of Combined Diapositives"
 (BRIKH). 3) D. A. Marin (Pskovskoye AZP (Pskov AZP)) for
 "Reduction of Work in Evaluating the Accuracy of Synthetic
 Geodetic Data Formed by Figures of Regular Polygons". 4) N. V.
 Golovinskiy (Vostochnyye kartograficheskiye zavody) for
 "Collapsible Ladder of Dural for Projecting". The 3rd prizes
 of 500 rubles each were awarded to: 1) E. F. Shvachkin
 (Izdatel'skoye AZP (Izdat'skoye AZP)) for "Establishment of Fixed
 Points by the Method of Reading by Means of Vapor". 2) V. M.
 Orshanskiy (Izdatel'skoye AZP (Izdat'skoye AZP)) for "Construction
 of a New Type of Instrument for Measuring the Angle of
 (Monokovskoye AZP (Monokovskoye AZP)) for "Variation in the Alignment
 of Photographs on the STD-2". 4) V. F. Zarubin (Moskovskoye
 AZP (Moscow AZP)) for "Raising of Geodetic Points by 5-7
 Meters". 5) D. V. Seleznev, I. V. Gurevich, E. I. Aleksandrova,
 I. M. Voznukhin, V. K. Kravchenko and V. K. Kravchenko (Minsk
 AZP (Minsk AZP)) for "Improvement of the Method of Measuring
 the Angle of Dip of a Line". 6) M. V. Zolotarev (Minsk
 kartograficheskaya fabrika (Minsk Cartographic Institute))
 for "Vertical Piling Machine for Brochures". 7) A. A. Vukobry
 (Izdatel'skoye AZP (Izdat'skoye AZP)) for "Mechanism for the Loading of Trunk
 (with Paper Rolls)". 8) A. K. Kravchenko (Izdatel'skoye AZP (Izdat'skoye
 AZP)) for "Improvement of the Method of Measuring the Angle of Dip
 of a Line". 9) A. K. Kravchenko (Izdatel'skoye AZP (Izdat'skoye
 AZP)) for "Improvement of the Method of Measuring the Angle of Dip
 of a Line". 10) A. K. Kravchenko (Izdatel'skoye AZP (Izdat'skoye
 AZP)) for "Improvement of the Method of Measuring the Angle of Dip
 of a Line". 11) S. K. Kravchenko (Moskovskoye AZP (Moscow AZP))
 for "Formula and Form for a More Rational Computation of
 Super-elevations from the Trigonometric Leveling". 12) D. A. Vukobry
 (Izdatel'skoye AZP (Izdat'skoye AZP)) for "New Method
 of Loading of Trunk (with Paper Rolls)". 13) A. K. Kravchenko
 (Izdatel'skoye AZP (Izdat'skoye AZP)) for "Improvement of the Method
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 (Izdatel'skoye AZP (Izdat'skoye AZP)) for "Improvement of the Method
 of Measuring the Angle of Dip of a Line".

Card 1/6

Card 2/6

Card 3/6

~~Spiridonova, Ye.N.~~
1
SPIRIDONOVA, Ye.N.; NESTEROVA, G.V.

2. Pilot gun as a substitute for a static in copying positives.
work experience. Star, since 1977-1984. (MLRA 1989)
(overprinting)

NESTEROVA, E. P., BRATKOV, V. .

Experience With the Application of Air Data During the Sol. Period of
the Year.

VOYENNO-PEDAGOGICHESKIY ZHURNAL (MILITARY PEDAGOGICAL JOURNAL), No 12, 1964. p.66

NESTEROVA, S.I., inzh.

Notes of an executive. Tekst. prom. 22 no.7:5-9 JI '62.
(MIRA 17:1)

1. Direktor fabriki "Osvobozhdenyy trud" Soveta narodnogo
khozyaystva Moskovskogo gerodskogo ekonomicheskogo rayona.

SEMKOV, Nikolai, inzh.; SHTIRKOV, Petur, inzh.; NESTOROVA, Penka, inzh.

Diagram and technological aspects of copper flotation in
enriching lean copper ore from the "Medet" bed. Tekhnika
Bulg 13 no.7:12-16, 33 '64.

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L 30229-66

ACC NR: AP6013825

located at about 44-45% Ru and 1970°C. The lattice constants of the various alloys were determined by the powder method. It was noted that in the 0-50% Ru range, the minimum of the solidus curve, maximum of the hardness curve, and transition of the body-centered cubic lattice to a tetragonal lattice correspond to the same composition (44-45% Ru). Orig. art. has: 6 figures.

SUB CODE: 11,20,13/ SUBM DATE: 25Apr65/ ORIG REF: 002/ OTH REF: 003

Card 2/2 (1 C)

1 30229-66 EWT(m)/T/EWP(w)/EWP(t)/ETI I.P(c) JD/JG

ACC NR: AP6013825 (N)

SOURCE CODE: UR/0189/65/000/006/0063/0068

AUTHOR: Panteleymonov, L. A.; Nesterova, O. P.; Akhmetzyanov, K. G.; Sokolova, I. G.

ORG: Chair of General Chemistry, Moscow State University (Kafedra obshchey khimii, Moskovskiy gosudarstvennyy universitet)

TITLE: Interaction of ruthenium and tantalum

SOURCE: Moscow. Universitet. Vestnik. Seriya II. Khimiya, no. 6, 1965, 63-68

TOPIC TAGS: ruthenium alloy, tantalum alloy, alloy phase diagram, x-ray analysis, hardness, annealing, crystal lattice structure

ABSTRACT: Alloys of the ruthenium-tantalum system were investigated by microscopic and x-ray analyses, measurements of hardness and microhardness, and determination of the melting point and electrical conductivity in the 50-700°C range. Homogenized specimens were quenched in water from 1800, 1500, and 1400°C after being first kept at these temperatures for 10-15 hrs. Annealing in evacuated quartz ampoules lasted 1500 hr. The phase diagram of the system is given. The crystal structures of cast, quenched, and annealed alloys of various Ru contents are described. The microhardness curve showed that the solubility of ruthenium in the compound TaRu at 1800 and 800°C is 21 and 18%, respectively. Visual observation of the start of fusion of homogenized specimens showed that the compound TaRu melts at 2050°C, a eutectic equilibrium takes place at 1950°C (eutectic point at 70% Ru), and the minimum of the solidus curve is

UDC: 669.017.11

Card 1/2

L 30231-66

ACC NR: AP6013824

NbRu and quenched from 1500° showed the presence of a primitive rhombic lattice with lattice parameters $a=4.351 \pm 0.005 \text{ \AA}$, $b=4.226 \pm 0.005 \text{ \AA}$, and $c=3.365 \pm 0.005 \text{ \AA}$. The alloy with 47% Ru has an ordered tetragonal lattice with $a=3.090 \pm 0.005 \text{ \AA}$, $c=3.292 \pm 0.005 \text{ \AA}$, $c/a=1.065$. The alloy with 40% Ru has a body-centered cubic lattice, and the one with 42% Ru, an ordered tetragonal lattice. The alloy containing 76% Ru, quenched from 1700°C, has a hexagonal lattice with $a=8.340 \pm 0.005 \text{ \AA}$, $c=13.440 \pm 0.005 \text{ \AA}$, $c/a=1.537$. Hence, the high-temperature modification of ruthenium has a hexagonal lattice (the low-temperature one having a hexagonal close-packed lattice). Orig. art. has: 7 figures.

SUB CODE: 11,20,13/ SUBM DATE: 25Apr65/

ORIG REF: 002/

OTH REF: 004

Card 2/2

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L 30231-66 EWT(m)/I/EWP(t)/ETI IJP(c) JD/JG
 ACC NR: AP6013824 (N) SOURCE CODE: UR/0189/65/000/006/0057/0062

AUTHOR: Panteleymonov, L. A.; Nesterova, O. P.; Guts, Z. A.; Akhmetzyanov, K. G.; Sokolova, I. G. 44 B

ORG: Chair of General Chemistry, Moscow State University (Kafedra obshchey khimii, Moskovskiy gosudarstvennyy universitet)

TITLE: Interaction of niobium and ruthenium

SOURCE: Moscow. Universitet. Vestnik. Seriya II. Khimiya, no. 6, 1965, 57-62

TOPIC TAGS: ruthenium alloy, niobium alloy, alloy phase diagram, annealing, crystal lattice structure, x ray analysis

ABSTRACT: Alloys of the niobium-ruthenium system were studied by methods of microscopic and x-ray analyses, hardness and microhardness, and determination of melting point, electrical conductivity in the 50-700°C range, and thermal conductivity in the 25-500°C range. Homogenized specimens were quenched from 1500° in water after being kept for 10 hr at this temperature. Annealing was carried out for 1500 hr at 800° in evacuated quartz ampoules. The phase diagram of the system is given. Visual observations of the start of fusion of homogenized specimens established that the compound NbRu melts at 1900°C, a eutectic equilibrium takes place at 1760°C (the eutectic point corresponds to 66% Ru) and the minimum on the solidus curve is located at about 40% Ru and 1800°C. X-ray analysis of the alloy corresponding in composition to the compound

UDC: 669.017.11

Card 1/2

ACCESSION NR: AP4009359

S/0078/64/009/001/0226/0228

AUTHORS: Panteleymonov, L. A.; Nesterova, O. P.

TITLE: Investigation of alloys of the NiSb-Ni₃Sn₂ system.

SOURCE: Zhurnal neorganicheskoy khimii, v. 9, no. 1, 1964, 226-228

TOPIC TAGS: nickel antimony tin system, nickel antimonide containing system, nickel, tin, containing system, structural diagram, nickel containing alloy, thermal analysis, hardness, microstructure

ABSTRACT: From thermal analysis and a study of the hardness and microstructure of the binary system NiSb-Ni₃Sn₂, it appears to be a quasibinary section of the ternary system Ni-Sb-Sn. Interaction between the components of the NiSb-Ni₃Sn₂ system can be represented by a structural diagram with a continuous series of solid solutions (Fig. 1). Orig. art. has: 3 Figures.

ASSOCIATION: None

Card

1/3

Sub: 11 Aug 62

L 11556-66

ACC NR: AR5027559

30-60 sec. The coefficient R was determined according to Bogdanov's method. The experimental data can be well approximated by a curve $\bar{R}(\Delta f) = e^{-a^2 \Delta f^2}$, where a^2 (from the experiment) is 0.045. With $f = 4$ kc, R was 0.5. A theoretical estimate made from known formulas yields $f = 7$ kc at $R = 0.5$. The discrepancy can be explained by the fact that the formulas were developed for narrow directional patterns. Bib 5, figs 2. Translator's note: [The formula seems to be wrong]

SUB CODE: 17, 09

HW

Card 2/2

L 11556-66 ENT(d)/ENT(j) RB/WS-2

ACC NR AR5027559

SOURCE CODE: UR/0274/65/000/008/A025/A025

SOURCE: Ref. zh. Radiotekhnika i elektrosvyas', Abs. 8A194

AUTHOR: Vetshev, Zh. N.; Nesterova, O. M.

TITLE: Determining the frequency band transmittable without distortion via
ionospheric scatter *q*

CITED SOURCE: Tr. Sibirsk. fiz.-tekhn. in-ta pri Tomskom un-te, vyp. 45, 1964,
200-203

TOPIC TAGS: ionospheric scatter ~~propagation~~, radio signal, ^{signal} transmission, frequency
band, radio transmitter, radio receiver, antenna

TRANSLATION: The coefficient of frequency correlation R between the levels of the
signals differing in frequency by $\Delta f = 2, 4, \text{ and } 6 \text{ kc}$ was experimentally determined
on a 1570-km route. Side frequencies of an AM-transmitter received separately by
two receivers were used for delivering test signals. The transmitter supplied an
antenna whose directional pattern in the horizontal plane was 48° . The received
signals were recorded on photosensitive paper by means of an electromagnetic
oscillograph having a tape-transport speed of 25 mm/sec. The test interval was

Card 1/2

UDC: 621.396.228:621.371.177

SECRET
 INFORMATION NO. 10007500

The antenna having a broad directivity pattern in the horizontal plane, the signals received signals were recorded on photographic paper with the aid of a long oscillograph with a chart speed 25 mm/sec. The recording interval was 20-30 sec. The value of R was determined by the logarithm method. The experimental data are well approximated by the curve $R(Af) = \exp(-a^2 Af^2)$, where a^2 amounts to 0.5 according to the experiment. A value $R = 0.5$ was obtained at $Af = 7$ kps. Calculation made in accordance with the formulas of [1] yields $Af = 7$ kps for $a^2 = 0.5$. The authors attribute the discrepancy to the fact that the theoretical formulas have been derived for narrow directivity pattern.

ENCLOSURE

TR/1019/62/010/006/1019/1019

1. NAME : Mr. M. S. M. S. M. S.

1. Information of the message transmitted without
 2. transmission in accordance with the

~~... ..~~

bandwidth, correlation coefficient,

FIGURE 10. The coefficient R of correlation between signal levels at the receiver in frequency ν at $\nu = 2, 3, 4$ and 6 kas was determined experimentally along a path 1570 km long. The signals investigated were of a standard frequency of an AM transmitter, separate from the receiver. The transmitter operated with an

1. INTRODUCTION

The mean square deviations of the phase difference and the mean square deviations in the case of frequency diversity reception are obtained. The distribution of the probabilities of the relative error of the signal in multipath propagation is obtained.

1980, 80

POLYMER LETTERS

STATION: 2ND St. N. 1212, Ada 521157

[illegible]

Amplitude and phase characteristics of an ionospheric

[illegible]

transmission characteristics, amplitude characteristic, phase characteristic, diversity reception, selective fading, multipath fading.

Distortions are calculated for the amplitude-frequency and phase-frequency characteristics of an uncoordinated receiver channel at carrier frequencies of 100 and 1000 Mc with presence of selective fading. These calculations make it possible to determine the probability of occurrence of amplitude and phase distortions in a specified frequency

S/194/62/000/010/054/084
A061/A126

AUTHORS: Bocharov, V.I., Nesterova, O.M., Nesterova, I.I.

TITLE: Scattering of short radio waves in the F₂ layer of the ionosphere

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 10, 1962,
27, abstract 10Zh179 (Tr. Sibirsk. fiz.-tekhn. in-ta pri Tomskom un-
te, 1960, no. 38, 74 - 79)

TEXT: The possibility of the scattering of waves in the short wave and the lower part of the ultrashort wave ranges in the F layer of the ionosphere, which has been established, is evidence of the presence of small-scale inhomogeneities in the spectrum of inhomogeneities. Experimental data on the scattering of 21.12 Mc waves in the F₂ layer of the ionosphere over an extension of 1,340 km are given. It is shown that it is possible to establish communication at frequencies exceeding by 2 - 3 times the maximum usable F₂-layer frequency. The approximate formula analytically obtained by Uilon (RZhFiz, 1958, no. 5, 11340), which takes account of the effect of refraction on radio wave scattering, is shown to agree well with experimental data.

[Abstracter's note: Complete translation]

Card 1/1

~~APPROVED FOR RELEASE: 12/02/11: CIA-RDP86-00513R001136700029-6~~

СОВЕТСКИЙ, Л.П.; КОЗЛОВ, В.П.; КУЗНА Г. .: "Тех. физ.", 1980.

Equipment for live and dead fish and for the production of embryos; based on studies of the VNIIO in the Department Scientific Research Institute, Dvory VNIIO no. 32, 1948, 1950, (MIRA 1940)

ACCESSION NO: ABB001318

influence on the work and its strength. It is concluded that pronounced anticorrosive properties of the material cannot be used as a criterion of its resistance to cavitation in water. It is noted that the test has 5 figures.

ABSTRACTOR: Ural'skiy polimernyye i khimicheskiye institut im. S. M. Kirova (Ural'sk poly-
mernyy institut)

SUBMITTED: 27 MAY 64

ENCL: 00

SUB CODE: MM -

NO REF ID: 017

OTHER: 003

[illegible]

S/137/62/006/003/098/191
AC06/A101

AUTHOR: Nesterova, N.V.

TITLE: Changes in the wall thickness of sleeves in mandrel-less diagonal rolling on a piercing mill of unit "140"

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 3, 1962, 31, abstract 3D175 (V sb. "Proiz-vo trub", no. 5, Khar'kov, Metallurgizdat, 1961, 72 - 75)

TEXT: A method was developed for calculating changes in the wall thickness of sleeves during diagonal rolling without a mandrel on a piercing mill of unit "140", of UkrNITI. Tests were made with a series of sleeves, 40 mm in diameter, on a laboratory piercing mill for rolling grade St.20 sleeves with 16% reduction in nick. A formula was derived to calculate changes in the wall thickness of the sleeve.

N.Yudina

[Abstracter's note: Complete translation]

Card 1/1

It was found that the use of gas regeneration of nonhearth furnaces showed a considerable saving in the cost of operation of the 2-3 upper zones of the furnace. The use of gas regeneration of well-hearth and temperature control in the lower zones of the regeneration of nonhearth furnaces of the type used in the USSR is not possible in the most possible good conditions. The use of gas regeneration of well-hearth furnaces is not possible in the USSR.

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

SECRET

U.S. PAT. 3,700,000

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U.S. PAT. 3,700,000

An installation for determining ...

S/145/61/000-004/004/008
D221/D301

nous motor rotation is determined by the angle of pointer motion

$t = \frac{i\varphi^0}{6n_m}$, where t is the duration of the motor movement, i is the ratio; n_m is the rpm of the motor; φ^0 is the angle of rotation of the pointer in degrees. By substituting into the previous equation,

$M_f = I \frac{\omega_s - \omega_f}{i\varphi^0} 6n_m$ which is the basic calibration equation of the

instrument. The limits of reading were 3 - 100 g-cm, but this may be changed by modifying the range of the frequency meter. The accuracy of measurements depends on errors due to ICh-6 instrument, the constancy of synchronous motor, CA-2 (SD-2) rotation, and also on the precision of the angular scale. The total error is held within 2.5 - 3 %. There are 5 figures and 2 Soviet-bloc references. ✓

ASSOCIATION: MVTU im. N.E. Baumann (MVTU im. N.E. Baumann)

SUBMITTED: June 7, 1960

Card 3/3

An installation for determining ...

S/145/61/000/004/003/008
D221/D301

finish of timing; t is the interval during which the speed drops from ω_s to ω_f . For constant value of I and selected speeds, the task is reduced to measuring t . For this purpose, the flywheel is connected to a perforated disc which is scanned by a light source $MC-1$ (LS-1) and a photo-cell ΦCA (FSA). The emitted signals are amplified and recorded by the frequency meter $W4-6$ (Ich-6). Consequently, the measured frequency depends on the speed of the disc. The amplifier is resistance-coupled to a three-cascade unit using 6H8C (6N8S) valves. The first valve operates as an amplifier, the last as a cathode follower. The gain is 1000, and the input voltage of the frequency meter amounts to 1 volt. The flywheel is accelerated to a speed $\omega_{max} > \omega_s$, and when it slows down to ω_s the photo-relay switches on the synchronous motor. The latter is switched off when the speed drops to ω_f . The angular rotation of the motor is proportional to the interval t . The setting of two photo-relays required a redesign of Ich-6 instrument. The load of bearings was determined by the weight of the moving system. A detailed description is given of the whole instrument set-up. The time of syn.

Card 2/3

S/145/61/000/004/003/008
D221/D301

AUTHOR: Nesterova, N.P., Assistant
TITLE: An installation for determining the friction moment
in plastic sliding bearings of instruments
PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Mashin-
ostroeniye, no. 4, 1961, 113 - 118

TEXT: The Department of Precision Mechanics Instruments at MVTU
im. Bauman (MVTU im. Bauman) carried out research on plastic bear-
ings for instruments. Its purpose is the selection of antifriction-
nal materials with low and stable coefficients of static friction
within a wide temperature range. The department developed a spe-
cial installation for measuring the friction moments at low speeds.
Its principle of operation is based on determining the run of a
flywheel with its shaft mounted in the tested bearings. The fric-
tion torque is given by $M_f = I(\omega_s - \omega_f/t)$, where I is the inertia
of the rotating system; ω_s and ω_f are the speeds at the start and

Card 1/3

ACC NR: AP7005318

orbit interaction constant does not depend on the crystalline field. The authors thank G. A. Smolenskiy for continuous interest in the work and a discussion of the results and S. D. Prokhorova for many measurements. Orig. art. has: 4 figures, 2 formulas, and 2 tables.

SUB CODE: 20/ SUBM DATE: 16Apr66/ ORIG REF: 004/ OTH REF: 010

Card 2/2

ACC NR: AP7005318

SOURCE CODE: UR/0181/67/009/001/0021/0026

AUTHOR: Nesterova, N. N.; Siniy, I. G.; Pisarev, R. V.; Syrnikov, P. P.

ORG: Institute of Semiconductors, AN SSSR, Leningrad (Institut poluprovodnikov AN SSSR)

TITLE: Infrared absorption spectrum of the antiferromagnets NaCoF_3 , KCoF_3 , and RbCoF_3

SOURCE: Fizika tverdogo tela, v. 9, no. 1, 1967, 21-26

TOPIC TAGS: antiferromagnetic material, ir spectrum, absorption spectrum, absorption edge, spin orbit coupling

ABSTRACT: The authors investigated the optical absorption of these antiferromagnets (with perovskite structure) in the region $750 - 2000 \text{ cm}^{-1}$ at 77 and 295K. One of the purposes of the investigation was to determine the influence of the exchange interaction and to obtain a clear cut spectrum. The single crystals were grown from the melt and the absorption spectra were measured with an IKS-21 spectrometer. All the compounds exhibited an absorption band near 1200 cm^{-1} and weak bands at the absorption edge of the lattice. The 1200 cm^{-1} band is identified with the $\Gamma_6 + \Gamma_7$ transition between the split levels of the orbital triplet. When the temperature is decreased from 295 to 77K, an increase of 40 cm^{-1} in the half-width of this absorption band is observed in KCoF_3 , and decreases of 55 and 20 cm^{-1} are observed in the half-widths of the absorption bands in RbCoF_3 and NaCoF_3 . The results show that the spin-

Card 1/2

AKIMOVA, Ye.P.; RUDOI, V.S.; SHEVCHENKO, L.N.; NESTEROVA, N.N.;
Prinimali uchastive: VASILENKO, S.I.; ZUYEV, I.I.; VIL'YAMS, O.S.;
LAGUTINA, R.V.; DERGACH, A.Ya.; KITANENKO, V.F.; KIRVALIDZE, N.S.;
YAKIMENKO, N.S.; SAMOYLENKO, V.D.

Effect of the method of manufacturing EI847 steel on the quality
of tubes. Stal' 21 no.12:1113-1114 D '61. (MIRA 14:12)

1. Ukrainskiy nauchno-issledovatel'skiy trubnyy institut (for
Akimova, Rudoi, Shevchenko. Nestorova). 2. Nikopol'skiy
yuzhnotrubbyy zavod (for Vasilenko, Zuyev, Vil'yams, Lagutina,
Dergach, Kitanenko, Kirvalidze, Yakimenko, Samoylenko).
(Steel, Stainless--Electrometallurgy)
(Pipe mills--Quality control)

The effect of the 3H847 (BI847) steel.

3/133/61/001/001/001/001
A054/A127

The technology of electrosag remelting was developed at the "Elektrostal" Plant in collaboration with TsNIChM. There are 2 figures and 2 Soviet-bloc references.

ASSOCIATION: UkrNITI

The effect of the 3N847 (EI847) steel

3/133/61/000/012/005/006
A054/A127

for heats E, i.e., heats smelted according to the A and B variant and with subsequent electroslag remelting. Indices for oxide-inclusions between 1 and 2.5 were registered for these heats and, besides oxide inclusions, no other impurities were observed. The steel ductility was tested by its piercing properties and by hot torsion at 1,000 - 1,275°C. Also these properties were found to be better for steels smelted in arc furnaces and subjected to electroslag remelting. The ductility of the steel produced by electroslag remelting increases continuously at rising temperatures, whereas in steels produced in arc furnaces without electroslag remelting it drops above 1,250°C. The formation of film on tubes made of steels remelted by the electroslag process was prevented and laminations with knurled edges and dark base (2 - 3 mm in length), often found in conventional tubes, were not observed either in tubes manufactured by the new process. As regards the consumption coefficients the same rules were found as for the above-mentioned parameters: the consumption coefficient for heats A' is 17, for heats A" and B: 1.9 - 3.1, for C - D: 2.0 - 2.5, for steel remelted with electroslag E: not more than 1.6 - 2.0. The tests were carried out in cooperation with S.I. Vasilenko, I.I. Zuyev, O.S. Vil'yams, R.V. Lagutina, A.Ya. Dergach, V.P. Kitanenko, N.S. Kirvalidze, N.S. Yakimenko, V.D. Samoylenko [Nikopol'skiy yuzhnotrubbyy zavod (Nikopol' Yuzhnotrubbyy Plant)]

Card 2/3

S/133/61/000/012/005/006
A054/A127

AUTHORS: Akimova, Ye.P.; Rudoy, V.S.; Shevchenko, L.N.; Nesterova, N.N.

TITLE: The effect of the EI847 (EI847) steel smelting process on the quality of tubes

PERIODICAL: Stal', no. 12, 1961, 1,113 - 1,114

TEXT: During the finishing of hot-rolled EI847 (chrome-nickel-molybdenum-niobium) steel tubes laminations were found in the steel structure. To establish the cause of these defects, the effect of the smelting process on the tube quality, the distribution of nonmetallic inclusions in the billets and the metal ductility were studied. 26 heats were smelted under the following conditions: A - in electric arc furnace; reduction with calcium-silicate; B - in electric arc furnace; reduction by means of aluminum; C - in induction furnace; reduction with calcium silicate; D - in induction furnace; reduction with boron calcite; E - in electric arc furnace, with subsequent electro-slag remelting. The content of globular and sulfide inclusions was very low for all heats; the oxide content, however, was rather high: for heats A: 7.5 - 4; for heats B: 7 - 3; for heats C: 6 - 4; for heats D: 3. The best results were obtained

Card 1/3

NESTEROVA, N. N., Cand. Tech. Sci. (diss) "Investigation of
Process of Rolling Hollow Shafts in Sloping Mill," Dnepropetrovsk,
1961, 15 pp. (Acad. of Sci. UkrSSR, Inst. of Ferrous Metallurgy)
200 copies (KL Supp 12-61, 271).

Investigation of the geometry ...

S/137/61/000/006/039/092
A006/A101

tables of rolling. The nature of these changes is represented by corresponding curves. It is shown that with a higher S_0/D_0 ratio at low degrees of wall deformation, the quality of the internal sleeve surface is impaired. This is connected with the presence of tensile stresses, during the deformation of the blank from $S_0/D_0 > 0.24$, in the reduction zone of the deformation seat of the piercing mill.

Yu. Manegin

[Abstracter's note: Complete translation]

Card 2/2

S/137/61/000/006/039/092
AC06/A101

AUTHOR: Nesterova, N.N.

TITLE: Investigation of the geometry and quality of sleeves during their rolling on a piercing mill

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 6, 1961, 34, abstract 6D281 ("Byul. nauchno-tekhn. inform. Ukr. n.-i. truh. in-t."), 1959, no. 6 - 7, 69 - 75)

TEXT: The author studied the effect of the S_3/D ratio, i.e. the correlation between the wall thickness and the diameter of the deformation degree of the wall and the reduction of the sleeve over the narrowing of the rolls, on the precision of geometrical dimensions of the sleeves and on the quality of their internal surfaces. The investigation was carried out on a laboratory piercing mill with 120 mm roll diameter and $30^\circ 30'$ angle of the inlet cone and $70^\circ 30'$ angle of the outlet cone. It was established that the geometry of the rolled sleeve does not correspond to the geometry of the deformation seat. This should be taken into account when designing rolling instruments and calculating

Card 1/2

SOV/133-59-1-15/23
 The Technology of Production of Seamless Tubes from High-alloy
 Steels Alloyed with Boron

possess high resistance to deformation and heat up intensively during piercing. The resistance to deformation of these steels is higher than of 1Kh18N9T steel which makes their piercing more difficult, particularly that with increasing temperature their plasticity decreases (unlike 1Kh18N9T steel). The developed methods of rolling these steels give quality hot-rolled tubes from EI769 steel without repairs and from EI770 steel with repairs which are usually permitted for high-alloy tubes, providing the metal is produced from fresh charges by the improved (1957) technology. The results of measurements of power consumption and heating up can be utilised for an approximate evaluation of these parameters during piercing of other austenitic steels. There are 6 figures, 3 tables and 6 Soviet references.

Card5/5

SOV/133-59-1-15/23

The Technology of Production of Seamless Tubes from High-alloy
Steels Alloyed with Boron

under industrial conditions is described in some detail. The results obtained are given in Table 1. The inspection of tubes after pickling indicated that for steel EI769 the proposed piercing practice (temperature 1 100 - 1 120 °C) gave the best results. A large-scale rolling of tubes from this steel yielded 90% of good-quality products. Rolling of tubes from steel EI770 was tried at four different temperature ranges (temperature before piercing: 920-980; 980-1 000; 1 020-1 040 and 1 040-1 050 °C - Table 2). Optimum results were obtained at a temperature before piercing of 950 °C. 95% of good-quality tubes was obtained. Mechanical properties of hot-rolled tubes before and after hardening are given in Table 3. Hardening of tubes was carried out from 1 100 °C. The dependence of the consumption of energy, power and heating-up of the metal during piercing on the temperature of the metal before piercing is shown in figure 6. It is concluded that:

- 1) boron-containing steels of austenitic class EI769 and EI770 possess a lowered temperature at the beginning of incipient melting of grain boundaries; their optimum plasticity is shifted towards lower temperatures; they

Card4/5

SOV/133-59-1-15/23

The Technology of Production of Seamless Tubes from High-alloy
Steels Alloyed with Boron

plasticity and structure of steels was carried out within a temperature range 950 - 1300 °C. Both steels were found to possess a comparatively high plasticity in the temperature range 975 - 1075 °C (Figures 1 and 2), higher than for steel 1Kh18N9T. However, the plasticity of the latter steel increases with increasing temperature while for EI769 and 770 it sharply decreases. In hot torsion tests (Figures 3 and 4) the differences in the plasticity of the experimental steels was more pronounced. The resistance to deformation of both steels is similar (Figure 4) but at all temperatures, is higher than for 1Kh18N9T steel. In hot torsion tests the loss of plasticity of the experimental steels was less pronounced than in piercing tests. In the first case, loss of plasticity was observed at 1300 °C and in the second case at 1250 °C. On the basis of the above investigation the following piercing practice for the industrial conditions was proposed: the temperature of billets before the mill 960-980 °C, piercing temperature 1100 - 1120 °C, in addition piercing at 1140 - 1150 °C and 1180 - 1200 °C was tested. Hot rolling of tubes

Card 3/5

SOV/133-59-1-15/23

The Technology of Production of Seamless Tubes from High-alloy Steels Alloyed with Boron

The main characteristics of the technology of smelting metal in 1956 and 1957 differed as follows: a) in 1956, smelting was carried out in a 20-ton arc furnace from a charge containing 40-47% of stainless scrap (the remaining-soft iron and fresh ferroalloys); oxygen was used during melting and oxidising period (500 - 700 m³ per heat); slag and metal were deoxidised before the addition of ferrochromium and with the addition of ferrotitanium onto the metal freed from slag 15-20 min before tapping; b) in 1957 smelting was carried out in a 4.5-ton arc furnace from a fresh charge containing from 55 to 78% armco iron and corresponding ferroalloys without utilisation of scrap and oxygen; refining under a white slag with the addition of ferrotitanium after the removal of slag 8-10 min before tapping. In both cases the metal was cast in 500-kg ingots. The quality of tube billets 85 mm in diameter in 1957 was higher than in 1956. The microstructure of metal in both cases consisted of austenite with fine intermetallic inclusions, stretched in the form of lines along the direction of rolling. Piercing ability of the steels was tested on conical specimens (Ref 3). The determination of

Card2/5

AUTHORS: Rudoy, V.S., Alferova, N.S., Konovalov, V.P., ^{SOV/133-59-1-15/23} ~~Nesterova, N.N.~~,
Korobochkin, I.Yu, Kirvalidze, N.S., Dergach, A.Ya and
Yakimenko, N.S.

TITLE: The Technology of Production of Seamless Tubes from High-
alloy Steels Alloyed with Boron (Tekhnologiya proizvodstva
besshovnykh trub iz vysokolegirovannykh staley s borom)

PERIODICAL: Stal', 1959, Nr 1, pp 68 - 73 (USSR)

ABSTRACT: Efforts made in 1956 to produce seamless tubes from high-
alloy steels containing boron EI769 and EI770 gave
negative results but in 1957 after some changes in the
technology of smelting the metal, satisfactory results
were obtained although there were no substantial changes
in the chemical composition of the metal (% , numerator -
data for 1957, denominator - for 1956):

	C	Si	Mn	Cr	Ni	W	Ti	B
EI769(Kh13N16TR)	$\frac{0.08}{0.07}$	$\frac{0.55}{0.64}$	$\frac{1.65}{1.73}$	$\frac{13.7}{13.7}$	$\frac{15.7}{14.9}$	$\frac{-}{-}$	$\frac{0.81}{0.90}$	$\frac{0.009}{0.0037}$
EI770(Kh13N18V2TR)	$\frac{0.08}{0.08}$	$\frac{0.51}{0.56}$	$\frac{1.58}{1.90}$	$\frac{13.2}{14.2}$	$\frac{19.7}{19.4}$	$\frac{2.34}{2.10}$	$\frac{0.81}{0.69}$	$\frac{0.0023}{0.0026}$

Card1/5

Regularities in changes ...

S/137/61/000/005/021/060
A005/A106

the aforementioned factors. It was found that at $S_0/D_0 < 0.24$ sleeves with thin walls are thickened and at $S_0/D_0 > 0.24$ they are thinned. Curves of the changes in the critical correlations are given, depending on various rolling parameters. Graphs of the strained state in the sleeve walls are plotted and the quality of the internal sleeve surface at changing wall thickness is described.

A. B

[Abstracter's note: Complete translation]

Card 2/2

S/137/61/000/005/021/060
A006/A106

AUTHOR: Nesterova, N.N.

TITLE: Regularities in changes of the geometry of sleeves during mandrelless diagonal rolling

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 5, 1961, 26, abstract 5D249 ("Tr. Ukr. n.-i. tshbn. in-ta", 1959, no. 1, 35 - 51)

TEXT: The author studied changes in the wall thickness of sleeves during mandrelless rolling depending on: 1) the sleeve diameter $D_0 = 25 - 50$ mm; 2) the wall thickness of the sleeve $S_0 = 2 - 25$ mm; 3) the reduction of the sleeve $m = 3 - 20\%$; 4) the material of the sleeve, i.e. (1) 3 (St.3), "20", bessemer, 1X18+9" (1Kh18N9T), 2) 257 (E257) steel, Cu; 5) on the temperature of heating the sleeve $T = 1,100 - 1,300^\circ\text{C}$; 6) the number of revolution of rolls $n = 62 - 154$ rpm; 7) the angle of the inlet cone of the rolls $\gamma = 30^\circ - 70^\circ$; 8) the inclination angle of the rolls $\alpha = 1 - 90^\circ$. As a result of experiments it was established that during the rolling of thick-walled sleeves thinning of the walls takes place, and thickening of the walls when rolling thin-walled sleeves. Graphs are plotted showing the dependence of the changes in the sleeve walls on

Card 1/2

L 4481-55

ACC NR: AP5024635

lation counters in the whole installation will be 204 m². Each station will be equipped with photomultipliers (total cathode area 180 cm² at each station) for recording the Corenkov flash accompanying a shower. In addition, there will be muon detectors with a total sensitive area of 22 m². Pulses will be transmitted from the more remote stations to the central laboratory by radio. It is anticipated that this installation will record 2 x 10⁵ showers per year with energies exceeding 10¹⁵ eV and 2 showers per year with energies exceeding 10²⁰ eV. Orig. art. has: 1 figure and 1 table.

SUB CODE: NP/ SUM DATE: 00/

ORIG REF: 002/ OTH REF: 000

Card 2/2

L 4481-66 ENT(1)/ENT(m)/FCC/T/ENA(h) IJF(c) GW

ACC NR: AP5024635

SOURCE CODE: UR/004R/65/029/009/1690/1692

AUTHOR: Vernov, S.N.; Yegorov, T.A.; Yegimov, N.N.; Krasil'nikov, D.D.; Kuz'min, A.I.; Maksimov, S.V.; Nesterova, N.M.; Nikol'skiy, S.I.; Sleptsov, Ye. I.; Shafer, Yu. G.

OIG: none

TITLE: Plan for a large installation at Yakutsk for study of extensive air showers
/Report, All-Union Conference on Cosmic Ray Physics held at Apatity 24-31 August 1964/

SOURCE: AN SSSR, Izvestiya. Seriya fizicheskaya, v. 29, no. 9, 1965, 1690-1692

TOPIC TAGS: primary cosmic ray, secondary cosmic ray, extensive air shower, spectral energy distribution, cosmic radiation composition, cosmic radiation anisotropy

ABSTRACT: After a discussion of the significance of extensive air showers for the investigation of ultrahigh energy primary cosmic rays, the authors briefly describe an installation to be completed in the next two or three years near sea level at latitude 62° N in the Yakutsk region; it is anticipated that the installation will yield information concerning the energy spectrum, composition, and anisotropy of primary cosmic rays with energies up to 10²⁰ eV. The installation, intended for investigation of extensive air showers, will comprise 65 stations spread over an area of 23 km². Each station will be equipped with scintillation counters with a total sensitive area of 1 m² or 4 m², and at the central station - 10 m². The total sensitive area of scintil-

Card 1/2

07010

CHUDAKOV, A.Ya.; DADYKIN, V.L.; ZATSEPIN, V.I.; NEETEROVA, N.P.

Search for 10^{13} ev. photons emanating from local radio sources.
Izv. AN SSSR.Ser.fiz. 29 no.10:1870-1871 O 1965.

(MIRA 18:10)

VERNOV, S.N.; YEGOROV, T.A.; YEFIMOV, N.N.; KRASIL'NIKOV, D.D.; KUZ'MIN,
A.I.; MAKSIMOV, S.V.; NESTEROVA, N.M.; NIKOL'SKIY, S.I.;
SLEPTSOV, Ye.I.; SHAFFER, Yu.G.

Project of a large setup for studying extensive air showers
in Yakutsk. Izv. AN SSSR. Ser. fiz. 29 no.9:1690-1692 S '65.
(MIRA 18:9)

L 1890-66

ACCESSION NR: AT5022824

2

This result conflicts with the hypothesis that electrons which produce the synchrotron radiation of the Crab Nebula are continuously formed and replenished by nuclear collisions, since the photon flux in this case would be 100 times greater. Hence, high-energy electrons in the Crab Nebula either formed during the first stage of the outburst of a supernova, or are also being accelerated at the present time by some very efficient mechanism. The problem of the existence of a photon flux coming from Cygnus A can be solved only by further experiments. Orig. art. has: 3 figures.

ASSOCIATION: Fizicheskii institut im. P. I. Lebedeva, AN SSSR (Physics Institute, AN SSSR)

53
SUBMITTED: 29Oct64

ENCL: 00

SUB CODE: AA

NO REF SOV: 002

OTHER: 000

mlr
2/2

L 1890-66 FBD/EWT(1) GS/GN/WS-2
 ACCESSION NR: AT5022824

UR/0000/65/000/000/0046/0049

AUTHOR: Chudakov, A. Ye.; Dadykin, V. L.; Zatsepin, V. I.; Nesterova, N. M.

TITLE: Search for high-energy photons from discrete sources of cosmic radio emission

SOURCE: ⁵⁵ Vsesoyuznoye soveshchaniye po kosmofizicheskomu napravleniyu issledovaniy kosmicheskikh luchey. 1st, Yakutsk, 1962. Kosmicheskiye luchy i problemy kosmofiziki (Cosmic rays and problems in cosmophysics); trudy soveshchaniya. Novosibirsk, Redindat Sib. otd. AN SSSR, 1965, 46-49

TOPIC TAGS: ^{12,53} radio emission, photon emission, cosmic radio source, cosmic ray shower

ABSTRACT: In 1960-61, the authors attempted to detect photons coming from discrete sources of cosmic radio emission by recording atmospheric showers by means of the Cerenkov radiation which the showers produce in the Earth's atmosphere. The observations were made at sea level in the Crimea on cloudless and moonless nights. The separation of the "photon" showers from the total shower mass produced by primary protons and nuclei was based solely on the expected angular anisotropy of the primary photons. The data showed that the photon flux does not exceed 10^{11} photon $\text{cm}^2 \text{sec}^{-1}$ for Cygnus A and Taurus A.

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ENCLOSURE: 02

TABLE 1. Comparison of primary coastal radar data and corresponding
secondary radar data for the period of 10/1/68 to 10/31/68 at Mountain View, CA.

Parameter	Primary Radar	Secondary Radar	Comparison	Remarks
1. Range (km)	0-100	0-100	0-100	0-100
2. Azimuth (deg)	0-360	0-360	0-360	0-360
3. Elevation (deg)	0-10	0-10	0-10	0-10
4. Power (dBm)	100	100	100	100
5. Frequency (MHz)	100	100	100	100
6. Wavelength (m)	3.0	3.0	3.0	3.0
7. Beamwidth (deg)	1.0	1.0	1.0	1.0
8. Resolution (m)	100	100	100	100
9. Accuracy (m)	100	100	100	100
10. Reliability (%)	90	90	90	90

Comparison of coastal radar data (per cent)

Comparison of distribution of data at Mountain View, CA (per cent)

ENCLOSURE 01

0

Distribution of relative values of the
Cavenkov class in extensive air showers
at 3000 m above sea level. The abscissas
are the quantities $\log_{10} (N/N_0) - 1$.
Calculated distributions: dash-dot --
for the case when all the showers are
primary of the same type; solid line --
when the showers are primary of
different types. Data.



[Handwritten: C]

[Handwritten: B]

[Faint, mostly illegible text, possibly a technical report or scientific document. Some words are difficult to discern due to the quality of the scan.]

2192-2
ACCESSION NO. 12-002094

for two assumed types of protons and other heavy particles. The first type contained data about the composition of primary cosmic rays with energies of 10^{11} to 10^{12} ev at the upper limit of the atmosphere. The second type contained primary cosmic rays with a composition having heavy nuclei with particle energies from 10^{11} to 10^{12} ev. The distribution of particles depends upon the composition of the primary cosmic rays. Orig. art. has 3 figures, 1 table, and 6 formulas. [EC]

Author: V. I. Pavlov, P. N. Lebedev Akademi nauk
USSR (Institute of Physics, Academy of Sciences, USSR)

NUMBER: 06

ENCL: 00

DIS CODE: AA

NO. IN SER: 006

OTHER: 004

LTD PRESS: 3173

ENT(M)/TWO(S)/FOR/TEL/MO(S)/YWA(N) Po-4/Pa-5/
 (S) ONAS
 1/0048/54/028/012/1930/1933

Author: NIKOL'SKIY, L. M.

Subject: Investigation of the composition of the primary cosmic rays of high energy

Source: Ak. SSSR, Vestya, Seriya fizicheskaya, v. 28, no. 12, 1964, p. 133

Keywords: Cosmic flash, cosmic ray shower, primary cosmic ray, atmospheric upper border, heavy nucleus

An analysis of the composition of primary cosmic rays of energy 10^{14} eV has been made, based on Gerasko's flashes occurring in the atmosphere. The number of particles passing through the atmosphere and the number of particles at the observational level. The fluctuations of the rate of primary flashes is compared with the number of particles of the shower recorded at Zvenigorod (elevation 3860 m) were compared with the composition of the composition of primary cosmic rays. The analysis was based on certain assumptions of the components. Using the composition of primary cosmic rays in showers was computed

CHUDAKOV, A.Ye.; LADYKIN, V.I.; ZATSEPIN, V.I.; NESTEROVA, N.M.

Search of photons with an energy of 10^{14} eV. from the
sources of cosmic radiofrequency radiation. Trudy Fiz.
Inst. 26:118-141 1964.

(MIRA 67-10)

APPROVED FOR RELEASE: 12/02/11: CIA-RDP86-00513R001136700029-6

VERHOFF, YOUNG, & CO. INC., 1000 BROADWAY, NEW YORK, N. Y. 10003
 JOHN HENRY, JR., 1000 BROADWAY, NEW YORK, N. Y. 10003

The characteristic features of piercing on mills 3/793/62/000/000/006/006
A004/A126

steels were tested on the laboratory installation, while tubes of the heat-resistant 3H 770 (EI/70) steel and thick-walled tubes of the grade 20 steel were rolled on the industrial mill. The laboratory tests yielded the following results: 1) The tendency to form hollows in the rolling of tapered specimens without mandrel decreases with an increase in the displacement of the rolling axis. 2) An improvement of the inner surface of the pierced sleeves could not be found with various displacements of the rolling axis in rolling cylindrical specimens on a mandrel. 3) In rolling on mandrels, the pressure on rolls and mandrel grows with an increasing displacement of the axis. 4) The nature of metal flow on the sleeve faces changes. There are 4 figures.

ASSOCIATION: AkrNITI

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Card 2/2

S/793/62/000/000/000/000
A004/A126

AUTHORS: Rudoy, V.S., Candidate of Technical Sciences, Nesterova, N.N., Engineer

TITLE: The characteristic features of piercing on mills with a displaced axis

SOURCE: Teoriya prokatki; materialy konferentsii po teoreticheskim voprosam prokatki. Moscow, Metallurgizdat, 1962, 717 - 720

TEXT: This research work was carried out from 1956 to 1959 by the Candidate of Technical Sciences V.S. Rudoy and Engineers N.N. Nesterova, I.Yu. Kero-bochkin, N.S. Kirvalidze, A.Ya. Dergach, N.S. Yakimenko and V.D. Samoylenko, and was aimed at studying the possibilities of improving the quality of sleeves and tubes by changing the mill setting, viz. by shifting the rolling axis, while all other rolling parameters were preserved. The tests were carried out on a laboratory-type piercing mill of the UkrNITI and on an industrial type 140 mill. High-alloy steels of the austenite [3H850 (E1850), 3H851 (E1851), 45Г17Д3 (45G17Yu3), 1X18H9T (1Kh18N9T)] and ferrite type [3H853 (E1853)] and carbon

Card 1/2

S/081/62/000/024/063/073
B166/B186

Sintering and forsterite ...

formation rises with the introduction of TiO_2 , ZrO_2 , Al_2O_3 and Na_2O and is slowed down by the introduction of CaO . It was found that forsterite can be sintered in the liquid and solid phases. A study of the microstructure of forsterite refractories showed that their microstructure can be considerably improved by using magnesite - quartzite blends instead of magnesite - dunite. It was demonstrated that sintering of periclase-forsteritic specimens deteriorates with increase in silica content and can be greatly intensified by the introduction of additions, TiO_2 and ZrO_2 being the most active additions for this purpose. At lower temperatures contact sintering is important; it proceeds with greater intensity in magnesite - dunite blends. [Abstracter's note: Complete translation.]

S/081/62/000/024/063/073
B166/B186

AUTHORS: Bron, V. A., Stepanova, I. A., Nesterova, N. M.

TITLE: Sintering and forsterite formation in the Mg - SiO₂ system

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 24, 1962, 570, abstract
24K222 (Tr. Vost. in-ta ogneuporov, no. 3, 1961, 240 - 261)

TEXT: Studies have been made of the processes involved in forming forsterite and in sintering periclase-forsteritic and forsteritic finely disperse masses, so as to find ways of producing periclase-forsteritic and forsteritic refractories with enhanced density. Forsterite was synthesized both from pure oxides MgO - SiO₂ and from commercially pure products (dunite, quartzite, marshalite and broken silica refractories). The raw materials were ground to a particle size of 4 - 5 μ. The specimens were burned in a Kryptol kiln. It was found that at 1400 - 1450 °C the process of forsterite formation in blends of commercially pure products depends on the properties of the silica-containing additions; at higher temperatures the properties of these additions do not affect forsterite formation. The rate of forsterite
Card 1/2

NESTROVA, N.M., DADYKIN, V.L., ZATSEPIN, G.T., SHUDAKOV, A.YE.,

"A Search for Photons with the Energy of 10^{13} ev. From Discrete Sources of Cosmic Radiation,"

report presented at the Intl. Conference on Cosmic Rays and Earth Storms, Kyoto, Japan, 4-15 Sept 1961.

NESTEROVA, N. M., Cand. Phys-Math. Sci. (diss) "Cherenkov-type
Radiation of Broad Atmospheric Showers of Cosmic Rays." Moscow,
1961, 11 pp (Moscow State Univ., Scientif. Res. Instit. of Nu-
clear Physics) 175 copies (KL Supp 19-61, 282).

15.7140

28013

Z/011/61/018/007/003/008

E073/E535

AUTHORS: Rozovskaya, N.N., Bogatyrev, P.M., Nesterova, N.M. and Alekhina, R.N.

TITLE: Copolymerization of alkyd resins with styrene in the presence of peroxide initiators

PERIODICAL: Chemie a chemická technologie; Přehled technické a hospodářské literatury, v.18, no.7, 1961, p.331. abstract Ch61-4606 (Lakokrasochnyye materialy, no.4, 1960, 3-6)

TEXT: Copolymerization of alkyd resins with styrene is accelerated considerably and the molecular weight of the formed polymers and copolymers is appreciably reduced in the presence of oxygen from the air. Tertiary butyl peroxide is the best initiator and its presence brings about an appreciable increase in the viscosity of the reaction mixture. For this reason low viscosity alkyds, produced by the azeotropic method, have to be used 1 figure, 3 tables, 7 references.

[Abstractor's Note: Complete translation.]

Card 1/1

11

SLONIMSKIY, G.L., prof., doktor khim.nauk; NESTEROVA, N.M.; NESMEYANOV, A.N., akademik, glavnyy red.; TOPCHILYEV, A.V., akademik, zam. glavnogo red.; ISAKOVA, O.V., otv.red.; LIKHTENSTEYN, Ye.S., otv.red.; SHUNKOV, V.I., otv.red.; LOSKUTOVA, I.P., red.izd-va; YERIPANOVA, L.V., tekhn.red.

Valentin Alekseevich Kargin. Vstup.stat'ia G.L.Sloninskogo. Bibliografiia sost. N.M.Nesterovoi. Moskva, 1960. 80 p. (Materialy k biobibliografii uchenykh SSSR. Ser.khimicheskikh nauk, no.29). (MIRA 14:3)

1. Akademiya nauk SSSR.
(Kargin, Valentin Alekseevich, 1907-)

Number spectrum of ...

31522
S/627/60/002/000/004/027
D299/D304

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Physics Institute im. P. N. Lebedev AS USSR); Nauchno-issledovatel'skiy institut yadernoy fiziki MGU (Scientific Research Institute of Nuclear Physics Moscow State University) ✓

Card 4/4

31522
S/627/60/002/000/004/027
D299/D304

Number spectrum of ...

range $N \geq 10^7$, the apparatus was divided into 4 groups of counters. Further, extensive air showers were studied at an altitude of 3860 m. The apparatus was controlled by photomultipliers, recording the Cherenkov radiation [Abstractor's note: See article on p. 47, this Trudy. 7]. The shower axis and the number of particles were determined by means of a simulator. Showers with $N = 2 \cdot 10^4$ to 10^7 were investigated. From the obtained results, the integral spectrum of showers with $N = 2.5 \cdot 10^4$ to $1.3 \cdot 10^7$ was constructed, viz.

$$F(>N, 0) = (4,6 \pm 1,4) \cdot 10^{-11} \left(\frac{N}{10^6} \right)^{-(1,60 \pm 0,15)} \text{ cm}^{-2} \text{ sec}^{-1} \text{ sterad}^{-1}$$

The absorption length λ of showers was also determined; for showers with $N 10^5$, $\lambda = 156 \pm 22 \text{ gm/cm}^2$. There are 4 figures and 2 Soviet-bloc references.

Card 3/4

31522

S/627/60/002/000/004/027
D299/D304

Number spectrum of ...

for counters of different σ ; (σ varied between 0.4 and $1.65 \cdot 10^{-2} \text{ m}^2$). By comparing the measurements and the calculations, the integral spectrum of the showers was obtained: $F(>N) = 2.5 \cdot 10^{-3} N^{-(1.45 \pm 0.03)}$ $\text{cm}^{-2} \text{ sec}^{-1}$, with $N = 4 \cdot 10^3$ to 10^5 . For large N , the spectrum was obtained by individual study of the showers, at sea level. For this purpose, the majority of the counters were disposed in a circle. The position of the axis and the number of particles in each shower were determined by means of the electronic computer "Strela". Thereupon the integral spectrum was found for $N = 8 \cdot 10^4$ to $8 \cdot 10^5$, viz.

$$F(>N, 0) = (1.95 \pm 0.14) \cdot 10^{-10} \left(\frac{N}{10^5} \right)^{-1.5 \pm 0.1} \text{ cm}^{-2} \text{ sec}^{-1} \text{ sterad}^{-1}$$

Both series of measurements coincide in the range $N \approx 10^5$. In order to determine the absolute number of extensive air showers in the

Card 2/ 4

3.2410 (1559, 2205, 2705)

31522
S/627/60/002/000/004/027
D299/D304

AUTHORS: Kulikov, G. V., Nesterova, N. M., Nikol'skiy, S. I., Solov'yeva, V. I., Khristiansen, G. B., and Chudakov, A. Ye.

TITLE: Number spectrum of extensive air showers at altitudes of 200 and 3860 m above sea level

SOURCE: International Conference on Cosmic Radiation. Moscow, 1959. Trudy. v. 2. Shirokiye atmosferye livni i kosmicheskiye protsessy, 87-91

TEXT: Number spectra of extensive air showers were investigated in detail at the Physics Institute of the AS USSR and at Moscow State University. The spectra were investigated at an altitude of 3860 m and at sea level. Those at sea level were studied over a range $N = 4 \cdot 10^3$ to $3 \cdot 10^7$. For showers with small N (10^3 to $5 \cdot 10^4$), the statistical method was used. The apparatus incorporated hodoscoped Geiger-Müller counters, whose disposition is shown in a figure. The experiments yielded the number of anti-coincidences n per unit time

Card 1/4

31520
S/627/60/002/000/002/027
D299/D304

Cherenkov radiation of ...

ticles. Figures show that the relationship between the number of particles and the intensity of the light in the shower varies as a function of the inclination of the shower. The simultaneous measurement of the light intensity at predetermined distance from the axis, and of the total number of particles makes it possible to ascertain (in principle) the role of fluctuations in the development of showers. It was found, by comparing the fluctuations at the Pamir level and at sea level (according to measurements carried out in 1959 at Moscow State University) that the fluctuations have no significant part in explaining the altitude variation of showers. There are 9 figures and 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: W. Galbraith, J. V. Jelley. Nature, 171, no. 4347, 349, 1953. [Abstractor's note: Importance of the above investigation is stressed by K. Greisen in his article "Cosmic Ray Showers", Annual Review of Nuclear Science, v. 10, 1960, 63-108; same article also contains a critical appraisal of other results by Soviet investigators, reported in this Trudy.]

Card 3/3

31520

S/627/60/002/000/002/027
D299/D304

Cherenkov radiation of ...

intensity of the light flux at 5 points; 2) the density of the particle flow at 9 observation points and hence the position of the shower axis and the total number of particles; 3) the direction of the shower. Various showers were analyzed, with number of particles ranging from $2 \cdot 10^4$ to $1.3 \cdot 10^7$. The dependence of the intensity of the Cherenkov light on the distance from the shower axis was obtained for showers with number of particles N ranging from $2 \cdot 10^4$ to $2 \cdot 10^7$ at intervals of 10 to 250 m. from the axis, and various angles of incidence of the showers. Assuming the relationship $E = AN$, where E is the energy spent by the shower in the atmosphere, one obtains for A approx. 10 ev. Comparing the values of the light flares from showers with different number of particles, it is possible to determine the relationship between E and N . For showers with $N = 10^5$ to $N = 1.4 \cdot 10^6$, this relationship is $E \sim N^{0.8 \pm 0.05}$. This fact has to be taken into consideration when passing from the number spectrum to the energy spectrum of primary par-

Card 2/3

31520
S/627/60/002/000/002/027
D299/D304

3.2410 (1559, 2205, 2805)

AUTHORS: Chudakov, A. Ye., Nesterova, N. M., Zatsepin, V. I., and
Tukish, Ye. I.

TITLE: Cherenkov radiation of extensive air showers in cosmic
rays

SOURCE: International Conference on Cosmic Radiation. Moscow,
1959. Trudy. v. 2, Shirokiye atmosferynye livni i kas-
kadnyye protsessy, 47-55

TEXT: The results are given of measurements carried out in the
autumn of 1957 at the Pamir Mountain (3860 m). The apparatus con-
sisted of 10 light detectors and 9 hodoscope units with Geiger
counters. Two types of light detectors were used for the measure-
ments. Both types incorporated photomultipliers BC-1 (BS-1) or $\Phi\beta\gamma$ -
24 (FEU-24). The apparatus included 6 detectors of the second type
(with mirror). A special electronic circuit permitted measuring the
magnitude of the light flares in all the detectors. After process-
ing the data, it was possible to determine for each shower: 1) The

Card 1/3

NESTEROVA, N. M.

THE SPECTRUM OF EXTENSIVE AIR SHOWERS ACCORDING TO THE NUMBER OF PARTICLES; THE
COEFFICIENT OF ABSORPTION OF EXTENSIVE AIR SHOWERS
G.V. Kulikov, N.M. Nesterova, S.I. Nikolsky, G.B. Kristeansen, A.E. Chulakov

1. Utilizing the method of correlated hodoscopes, which permits determining the position of the axis and the number of particles in a shower, we have obtained data on shower spectra level and at sea level.
2. At 3860 m above sea level and the interval of particle-number variation in the shower from 3×10^4 to 10^7 , the spectrum is well approximated by power law $N^{-\chi}$, where $\chi = 1.6-0.1$. At sea level there is a greater probability that the spectrum will be irregular in the range $10^6 \leq N \leq 10^7$ (for $10^4 \leq N \leq 10^6$ $\chi = 2.1 \pm 0.5$, and for $N < 10^7$ $\chi = 1.5-0.2$).
3. The shower absorption coefficient obtained from a comparison of absolute number of showers with a number of particles greater than that given at mountain altitude and at sea level, amounts to $\mu = 1/(100-20) \text{ g/cm}^2$.

Report presented at the International Cosmic Ray Conference, Moscow, 6-11 July 1959

NESTEROVA, N.M.; NESMEYANOV, A.N., akademik, glavnyy red.; TOPCHIEV,
A.V., akademik, zam.glavnogo red.; BERKGAUT, V.G., red.izd-va;
UL'YANOVA, O.G., tekhn.red.

Petr Ivanovich Lukirskii. Vstup.stat'ia S.IU.Luk'ianova i A.N.
Murina. Bibliografiia sostavlena N.M.Nesterovoi. Moskva, Izd-vo
Akad.nauk SSSR, 1959. 40 p. (Materialy k biobibliografii uchenykh
SSSR. Ser.fiziki, no.11) (MIRA 12:11)

1. Akademiya nauk SSSR.
(Bibliography--Lukirskii, Petr Ivanovich, 1894-1954)

NESTEROVA, N.M.; NESMEYANOV, A.N., akademik, glavnyy red.; YEGOROVA, N.F.,
terkin.red.

Petr Petrovich Lazarev, 1878-1942. Moskva, 1958. 125 p.
(Materialy k biobibliografii uchenykh SSSR. Ser.fiziki, no.10)
(MIRA 12:4)

1. Akademiya nauk SSSR.
(Bibliography--Lazarev, Petr Petrovich, 1878-1942)

NESTEROVA, N.M.; BANKVITSER, A.L., red.izd-va; SIMKINA, G.S., tekhn.red.

Aleksei Aleksandrovich Balandin. Vstup.stat'ia A.M.Rubinshteina.
Bibliografiia sostavlena N.M.Nesterovoi. Moskva, 1958. 72 p.
(Materialy k biobibliografii uchenykh SSSR. Seriia khimicheskikh
nauk, no.28) (MIRA 12:3)

1. Akademiya nauk SSSR.
(Balandin, Aleksei Aleksandrovich, 1898-)